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Illinois
Environmental
Protection Agency

Division of Public Water Supplies
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Springfield, Illinois 62706

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Groundwater Quality Protection Program

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Hudson
FACILITY NUMBER 1130700
WELL SITE SURVEY REPORT

Division of Public Water Supplies





IEPA/PWS/ 92-087

GROUNDWATER QUALITY PROTECTION PROGRAM:

Hudson
FACILITY NUMBER 1130700
WELL SITE SURVEY REPORT

Presented by:

Division of Public Water Supplies

Published by:

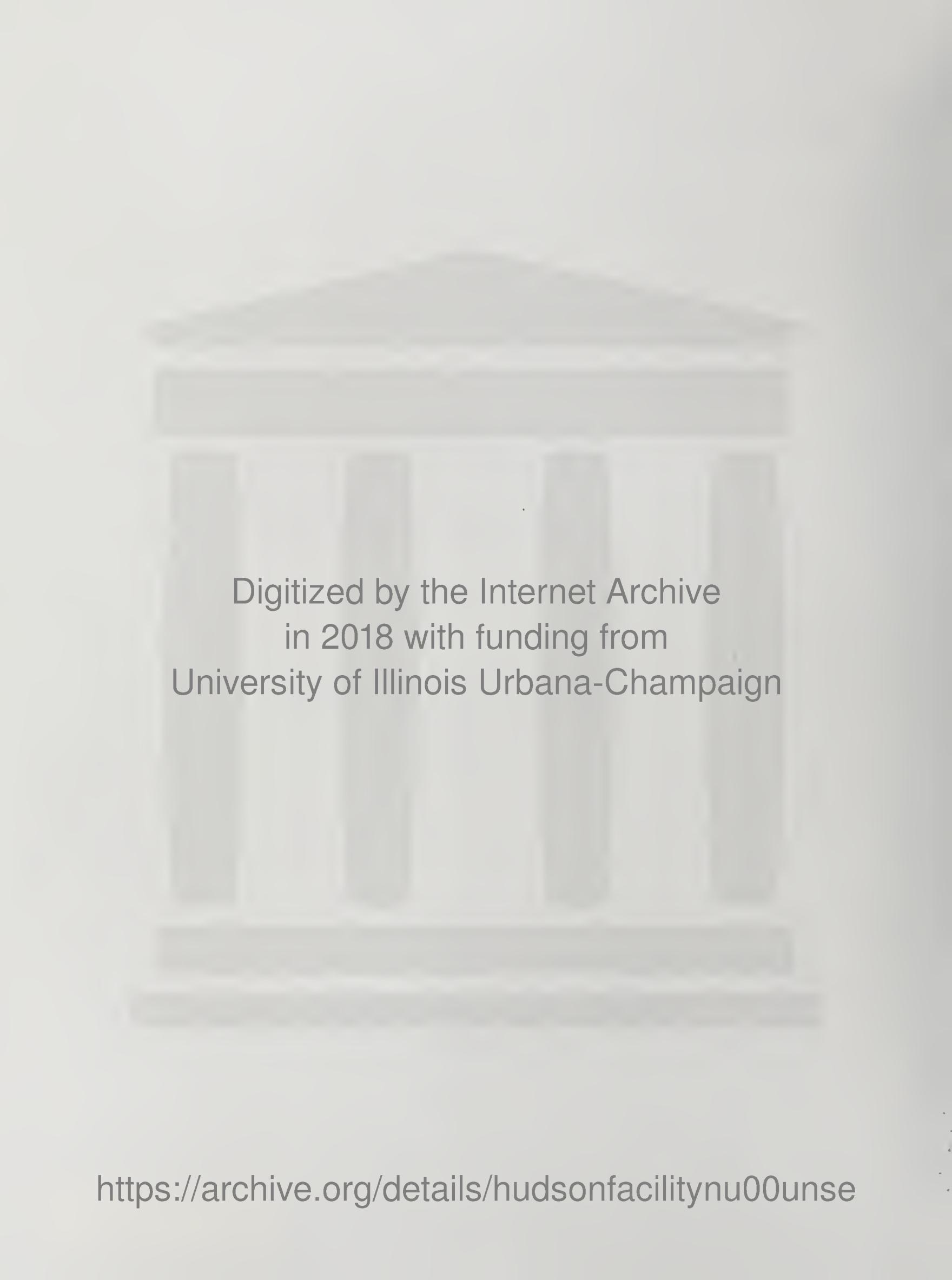
Illinois Environmental Protection Agency
Springfield, Illinois

June, 1992

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INTRODUCTION

This report has been prepared by the Illinois Environmental Protection Agency (Agency) pursuant to Section 17.1 of the Illinois Environmental Protection Act (Act). The report summarizes information about your facility and samples collected and analyzed from your well(s). The well site survey provides an inventory of the area around the well(s) to help increase your awareness of potential hazards to the groundwater utilized by your facility. This information and technical data will assist you in developing and implementing local groundwater protection measures authorized by the Act.

FACILITY DESCRIPTION AND GEOLOGIC PROFILE OF WELL SITES

Hudson obtains its water from the Bloomington PWS. Two drift wells are kept as a backup supply. See Table I for a description of each well. The surficial geologic susceptibility rating for both wells is E. The aquifer is overlain by low permeability silty/clayey till. Permeability is a measure of the ability of a soil or sediment to transmit fluids. A complete description and geologic profile is found in the Facility Wells Report (Appendix C).

TABLE 1

	Minimum Setback (ft.)	Maximum Setback (ft.)		Capacity (gpm)	Specific Capacity (gpm/ft.)	Treatment	Well Aquifer (ft.)	Well Logs	Well Avail.
			Status	(MGD)					
Well 1 (47629)	200	No	SB	65 0.094		None	Sand and Gravel	160	No
Well 2 (47630)	200	No	SB	200 0.288		Same	Same	96	No

SB-Standby

GROUNDWATER SAMPLING/ MONITORING HISTORY

Hudson Wells #1 and #2 were not sampled as part of a Statewide Groundwater Monitoring Program. Operator collected inorganic (IOC) analyses indicate that parameters are consistent with other sand and gravel aquifers in Illinois (Appendix D).

SURVEY METHODS AND PROCEDURES

The detailed well site survey consists of an aerial photographic map and inventory sheets (Appendix B), that relate information about potential sources, routes and possible problem sites to your water supply well(s). The location of potential sources, routes, possible problem sites, water supply wells, minimum setback zones, and 1,000 foot survey area are all displayed on the aerial photographic map.

The first page of each survey consists of a summary description and geologic profile for each well. The second and following pages of the survey inventory units within and bordering a 1,000 foot radius of the wellhead. A unit is defined as any device, mechanism, equipment, or area (exclusive of land utilized for agricultural production). The Agency five-digit well number is associated with a unit or map code, and then classified. The classification codes relate to definitions of potential contamination sources and routes as defined in the Illinois Groundwater Protection Act (see Groundwater Primer pages 18-19). The distance and direction of the unit from the wellhead is also indicated.

Survey Results and Findings:

The Hudson well site survey was conducted on January 31, 1992 by Wade Boring from the Agency's Springfield Office. The following describes the results and findings for the Hudson public water wells:

Hudson Well #1 (IEPA #47629)

The survey area is mostly rural. The area is a mixture of row crops, residential and commercial. There are five possible problem sites located within 1,500 feet of Well #1. They are McGrath Inc. (map code 1) 700 ft. N, Sun Ag Inc. (map code 2) 320 ft. SW, Casey's (map code 3) 350 ft. SE, the Hudson TWP garage (map code 4) 400 ft. S and Hudson Elementary School (map code 5) 1,200 ft. SE.

Hudson Well #2 (IEPA #47630)

The survey area is mostly rural. The area is a mixture of row crops, residential and commercial. There are three possible problem sites within 1,500 feet of Well #2. They are Casey's (map code 3) 1,400 ft. N, the TWP garage (map code 4) 1,250 ft. NNW and the Elementary School (map code 5) 650 ft. NE.

SUMMARY

The well site survey conducted indicates that there are potential sources/sites that could pose a hazard to grounder utilized by the Hudson public water wells.

- Four sites with below ground fuel storage; McGrath Inc., Sun Ag Inc., Casey's, the Hudson TWP garage and Hudson Elementary School.
- One site with above ground storage of fertilizers and pesticides; Sun Ag Inc.

The Act provides minimum protection zones for your wells. These minimum protection zones are regulated by the Agency. The Act also authorizes county and municipal officials the opportunity to provide maximum protection zones up to 1,000 feet. The responsibility for the control would then be assumed by the local officials through adoption of a maximum setback zone ordinance.

RECOMMENDATIONS

The Agency strongly urges Hudson to consider establishing maximum setback zones for its wells. The Agency has prepared a "Maximum Setback Zone Workbook" which provides detailed case studies of how to establish a maximum setback zone. Technical assistance is available from the Agency and the Illinois State Water Survey.

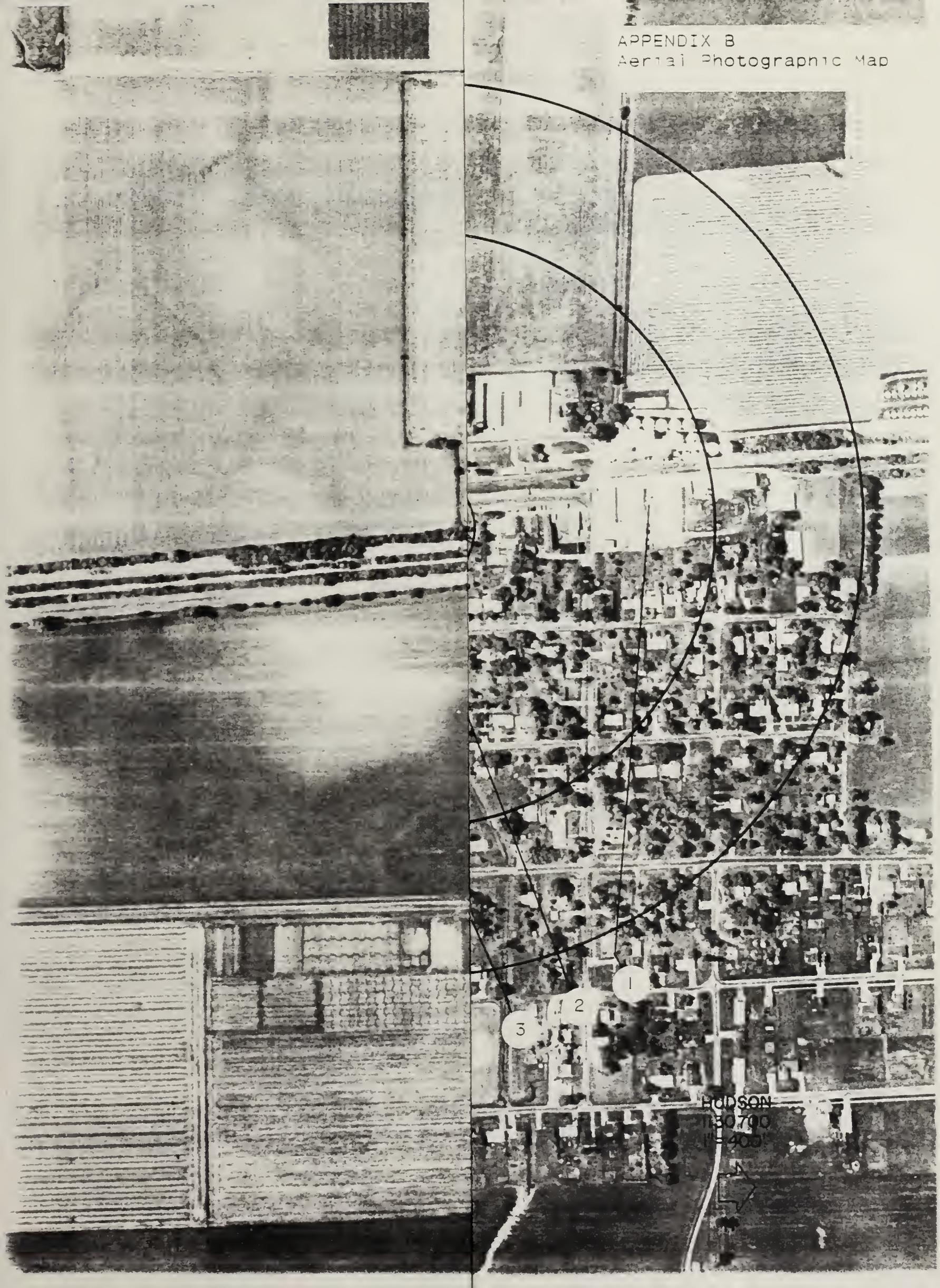
If no further use of the wells is expected, the Agency suggests that Hudson consider properly abandoning them in accordance with Dept. of Public Health rules and regs.

TECHNICAL APPENDICES

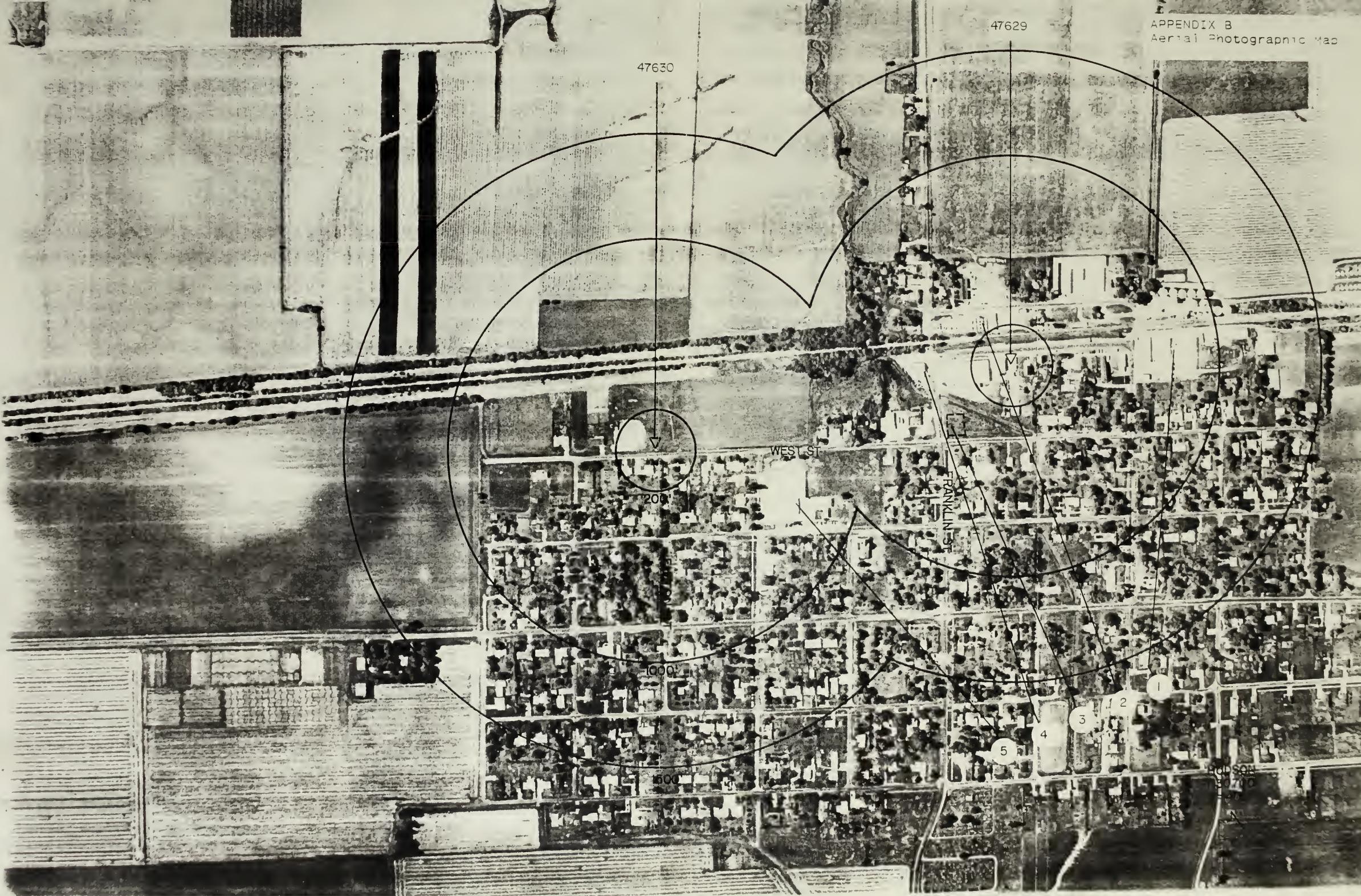
APPENDIX A - Topographic Map of Hudson
(1130700) Well Location



APPENDIX B
Aerial Photographic Map



47629

APPENDIX B
Aerial Photographic Map

APPENDIX B1 WELL SITE SURVEY SUMMARY DESCRIPTION AND GEOLOGIC PROFILE-Hudson WELL #1 (IEPA #47629)

SURVEYOR: W. Boring
SURVEY DATE: 1/31/92
ADDRESS: William Waller
Village Hall
Box 221
Hudson, IL 61748
47629
Well #1
01
1130700
309/726-1471
LOCATION:
TWP, RNG, SECTION, 10 ACRE PLOT: 25N, 2E, 21, 4A
DISTANCE FROM CORNER SECTION: 400N, 2200W
QUAD SHEET CODE & NAME: 111C Normal East
MINIMUM SETBACK: 200 ft.
MAXIMUM SETBACK:
GEOLOGIC SUSCEPTIBILITY RATING: E- low permeability silty/clayey
till
AGE OF WELL: 1955
WELL DEPTH: 160
DEPTH OF CASING: 154
AQUIFER CODE: 0101, Sand & Gravel
MULTIPLE AQUIFER (Y, N): N
SUMMARY DESCRIPTION OF 1,000 FT. RADIUS AREA:

The survey area is mostly rural. The area is a mixture of row crops, residential and commercial.

INTERVIEW(S):
NAME-AFFILIATION-ADDRESS-TELEPHONE NO.

APPENDIX B1: INVENTORY AND SYNOPSIS OF UNITS - Hudson WELL #1
(IEPA #47629)

CLASSIFICATION KEY

MINIMUM ZONE

PP = POTENTIAL PRIMARY
PS = POTENTIAL SECONDARY
RI = ROUTE
CC = CERTIFIED
XI = UNKNOWN
CU = CLEANUP

OUTSIDE MINIMUM ZONE

OP = POTENTIAL PRIMARY
OS = POTENTIAL SECONDARY
OR = ROUTE
CC = CERTIFIED
OX = UNKNOWN
CU = CLEANUP

WELL NO. - MAP CODE - CLASSIFICATION: 47629-01-OS

NAME & ADDRESS OF UNIT OWNER: McGrath Inc., Front and Walnut,
Hudson, IL, 61748 309/726-1311

DESCRIPTION AND COMMENTS: farm implement sales and service w/
below ground fuel storage in excess of 500 gallons,
ISFM #4-009397

PRE OR POST (Y, N): Y

DISTANCE AND DIRECTION: 700 ft. N

WELL NO. - MAP CODE - CLASSIFICATION: 47629-02-OS

NAME & ADDRESS OF UNIT OWNER: Sun Ag Inc., Hudson, IL 61748

DESCRIPTION AND COMMENTS: above ground storage of fertilizers and
pesticides, APC #113070AAB

PRE OR POST (Y, N): Y

DISTANCE AND DIRECTION: 320 ft. SW

WELL NO. - MAP CODE - CLASSIFICATION: 47629-03-OS

NAME & ADDRESS OF UNIT OWNER: Casey's General Store, West and
Franklin, Hudson, IL 61748 515/965-6100

DESCRIPTION AND COMMENTS: convenience store w/ below ground fuel
storage in excess of 500 gallons, ISFM #4-023957

PRE OR POST (Y, N): Y

DISTANCE AND DIRECTION: 350 ft SE

WELL NO. - MAP CODE - CLASSIFICATION: 47629-04-OX
NAME & ADDRESS OF UNIT OWNER: Hudson TWP, Hudson, IL 61748

DESCRIPTION AND COMMENTS: township garage w/ below ground fuel storage, no ISFM #

PRE OR POST (Y,N): Y

DISTANCE AND DIRECTION: 400 ft S

WELL NO. - MAP CODE - CLASSIFICATION: 47629-05-
NAME & ADDRESS OF UNIT OWNER: Hudson Elementary School, West St,
Hudson, IL 61748 309/452-4476
DESCRIPTION AND COMMENTS: elementary school w/ below ground fuel storage, ISFM #4-025734

PRE OR POST (Y,N): Y

DISTANCE AND DIRECTION: 1,200 ft SE

APPENDIX B2 WELL SITE SURVEY SUMMARY DESCRIPTION AND GEOLOGIC PROFILE - Hudson WELL #2 (IEPA #47630)

SURVEYOR: W. Boring
SURVEY DATE: 1/31/92
ADDRESS: William Waller
Village Hall
Box 221
Hudson, IL 61748

AGENCY WELL NO.: 47630
WELL NAME & DESCRIPTION: Well #2
TAP: 01
FACILITY NO. & NAME: 1130700
FACILITY PHONE CONTACT: 309/726-1471
LOCATION:
TWP, RNG, SECTION, 10 ACRE PLOT: 25N, 2E, 28, 4F
DISTANCE FROM CORNER SECTION: 1500S, 2000W
QUAD SHEET CODE & NAME: 111C Normal East
MINIMUM SETBACK: 200 ft.
MAXIMUM SETBACK:
GEOLOGIC SUSCEPTIBILITY RATING: E-low permeability silty/clayey till

AGE OF WELL: 1967
WELL DEPTH: 96 ft.
DEPTH OF CASING: 81 ft.
AQUIFER CODE: 0101, Sand & Gravel
MULTIPLE AQUIFER (Y, N): N
SUMMARY DESCRIPTION OF 1,000 FT. RADIUS AREA:

The survey area is mostly rural. The area is a mixture of row crops, residential, and commercial.

INTERVIEWS

NAME-AFFILIATION-ADDRESS-TELEPHONE NO.

APPENDIX B2: INVENTORY ANDSYNOPSIS OF UNITS - Hudson WELL #2 (IEPA #47630)

CLASSIFICATION KEY

MINIMUM ZONE

PP = POTENTIAL PRIMARY
PS = POTENTIAL SECONDARY
RI = ROUTE
CC = CERTIFIED
XI = UNKNOWN
CU = CLEANUP

OUTSIDE MINIMUM ZONE

OP = POTENTIAL PRIMARY
OS = POTENTIAL SECONDARY
OR = ROUTE
CC = CERTIFIED
OX = UNKNOWN
CU = CLEANUP

WELL NO. - MAP CODE - CLASSIFICATION: 47630-01-

NAME & ADDRESS OF UNIT OWNER: McGrath Inc., Front and Walnut, Hudson, IL, 61748 309/726-1311

DESCRIPTION AND COMMENTS: farm implement sales and service w/ below ground fuel storage in excess of 500 gallons, ISFM #4-009397

PRE OR POST (Y, N): Y

DISTANCE AND DIRECTION: 2,400 ft. NNW

WELL NO. - MAP CODE - CLASSIFICATION: 47630-02-

NAME & ADDRESS OF UNIT OWNER: Sun Ag Inc., Hudson, IL 61748

DESCRIPTION AND COMMENTS: above ground storage of fertilizers and pesticides, APC #113070AAB

PRE OR POST (Y, N): Y

DISTANCE AND DIRECTION: 1,650 ft. NW

WELL NO. - MAP CODE - CLASSIFICATION: 47630-03-

NAME & ADDRESS OF UNIT OWNER: Casey's General Store, West and Franklin, Hudson, IL 61748 515/965-6100

DESCRIPTION AND COMMENTS: convenience store w/ below ground fuel storage in excess of 500 gallons, ISFM #4-023957

PRE OR POST (Y, N): Y

DISTANCE AND DIRECTION: 1,400 ft. N

WELL NO. - MAP CODE - CLASSIFICATION: 47630-04-
NAME & ADDRESS OF UNIT OWNER: Hudson TWP, Hudson, IL 61748

DESCRIPTION AND COMMENTS: township garage w/ below ground fuel storage, no ISFM #

PRE OR POST (Y,N): Y

DISTANCE AND DIRECTION: 1,250 ft. NNW

WELL NO. - MAP CODE - CLASSIFICATION: 47630-05-OX
NAME & ADDRESS OF UNIT OWNER: Hudson Elementary School, West St, Hudson, IL 61748 309/452-4476

DESCRIPTION AND COMMENTS: elementary school w/ below ground fuel storage, ISFM #4-025734

PRE OR POST (Y,N): Y

DISTANCE AND DIRECTION: 650 ft. NE

APPENDIX C

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF PUBLIC WATER SUPPLIES
FACILITY WELLS REPORT

REPORT: PHGMW053
MODULE: PHGMW027

PAGE: 9
DATE: 05/06/92

FACILITY: 1130700 HUDSON

----- OWNER -----

WILLIAM WALLER

MAYOR - VILLAGE HALL

BOX 221

HUDSON

IL 61748

----- OFFICIAL CUSTODIAN -----

FRANK HEINEKE

VILLAGE HALL

BOX 221

HUDSON

IL 61748

WELL: 47629 WELL 1 IS INSIDE PLANT DOWNTOWN
LATITUDE: N40 36 27.0 LONGITUDE: W088 59 31.0
SUSCEPTIBILITY - LAND BURIAL: E SUSCEPTIBILITY - LAND SPREADING: D2
AQUIFERS: QUATERNARY SYSTEM

WELL: 47630 WELL 2 IS IN PARK ATWEST AND FULTON STS STATUS: INACTIVE* BACKUP DEPTH(FT): 96
LATITUDE: N40 36 16.0 LONGITUDE: W088 59 26.0 TWP: 25N RNG: 02E SEC: 28 PLOT: 4F
SUSCEPTIBILITY - LAND BURIAL: E SUSCEPTIBILITY - LAND SPREADING: D2
AQUIFERS: QUATERNARY SYSTEM

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50 SUSCEPTIBILITY CODES
LAND BURIAL: E = UNIFORM, RELATIVELY IMPERMEABLE SILTY OR CLAYEY TILL AT LEAST 50 FT THICK; NO EVIDENCE OF
INTERBEDDED SAND AND GRAVEL.
LAND SPREADING: D2 = UNIFORM, RELATIVELY IMPERMEABLE SILTY OR CLAYEY TILL AT LEAST 20 FT THICK; NO EVIDENCE OF
INTERBEDDED SAND AND GRAVEL.
*NOTE: INACTIVE WELLS SHOULD EITHER BE RETROFITTED FOR USE OR PROPERLY ABANDONED. INACTIVE WELLS WHICH ARE IMPROPERLY
ABANDONED ARE CONSIDERED POTENTIAL ROUTES ACCORDING TO P.A. 85-0863.

APPENDIX D

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51														
FACILITY:	1130700 HUDSON	TAP:	01 INACTIVE IRON REMOVAL-SOFTENING PLANT	RAW SRCE:	47630 WELL 2 IS IN PARK ATWEST AND FULTON STS	SAMPLE NO:	8041273	SMPL TYPE:	RAW	COLLECTOR:	FRANK HEIMEKE	SMPL PURP:	1-ROUTINE	COMMENTS:	SMPL PROG:	I-GWM INORG OBSRVATNS:	ANALYSIS RSLT	-----	STDRET-----	10	NO	NO	DESCRIPTION	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
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FACILITY: 1130700 HUDSON		SAMPLE NO: 8033440		TAP: 01 INACTIVE IRON REMOVAL-SOFTENING PLANT		RAW SRCE: 47629 WELL 1 IS INSIDE PLANT DOWNTOWN		STATUS: A		PUBLIC: Y		COMM: Y		TYPE: WATER:	
ANALYSIS	RSLT	STORED	ID	NO	NO	DESCRIPTION	UNITS	RESULT	DRINK WTR	RAW WTR	STANDARDS	TRIGGER	LEVEL		
00095	CONDUCTIVITY(FC)-LABCUMHOS/CM	3	25	C				1090.000							
00403	PH LABORATORY	UNITS						7.100							
00410	ALKALINITY, TOTAL	MG/L	AS	CACO3				590.000							
00610	NITROGEN, AMMONIA	TOTAL	MG/L	AS N				8.300							
00630	NITRATE & NITRITE	TOTAL	MG/L	AS N				0.100	<	10.000					
00720	CYANIDE, TOTAL	MG/L	AS	CH				0.005		0.200					
00900	HARDNESS, EDTA	MG/L	AS	CACO3				398.000							
00916	CALCIUM, TOTAL RECOVERABLE	MG/L	AS	CA ANAL BY ICP				88.000							
00927	MAGNESIUM, TOTAL RECOVERABLE	MG/L	AS	CA ANAL BY ICP				48.000							
00929	SODIUM, TOTAL RECOVERABLE	MG/L	AS	NA ANAL BY ICP				28.000							
00937	POTASSIUM, TOTAL RECOVERABLE	MG/L	AS	K ANAL BY ICP				2.200							
00940	CHLORIDE, TOTAL	MG/L	AS	CL				23.000							
00945	SULFATE, TOTAL	MG/L	AS	SO4				13.000							
00951	FLUORIDE, TOTAL	MG/L	AS	F				0.570		4.000					
00956	SILICA, TOTAL	MG/L	AS	S102				16.000							
01002	ARSENIC, TOTAL RECOVERABLE	UG/L	AS	AS				36.000		50.000					
01007	BARIUM, TOTAL RECOVERABLE	UG/L	AS	BA ANAL BY ICP				514.000		1000.000					
01012	BERILLIUM, TOTAL RECOVERABLE	UG/L	AS	BE ANAL BY ICP				0.500	<						
01022	BORON, TOTAL RECOVERABLE	UG/L	AS	B ANAL BY ICP				12.000							
01027	CADMIUM, TOTAL RECOVERABLE	UG/L	AS	CD ANAL BY ICP				4.000		10.000					
01034	CHROMIUM, TOTAL RECOVERABLE	UG/L	AS	CR ANAL BY ICP				5.000	<	50.000					
01037	COBALT, TOTAL RECOVERABLE	UG/L	AS	CO ANAL BY ICP				5.000	<						
01042	COPPER, TOTAL RECOVERABLE	UG/L	AS	CU ANAL BY ICP				227.000		5000.000					
01045	IRON, TOTAL RECOVERABLE	UG/L	AS	FE ANAL BY ICP				9954.000		10000.000*					
01051	LEAD, TOTAL RECOVERABLE	UG/L	AS	PB				99.000		50.000*					
01055	MANGANESE, TOTAL RECOVERABLE	UG/L	AS	MN ANAL BY ICP				71.000		150.000					
01067	NICKEL, TOTAL RECOVERABLE	UG/L	AS	NJ ANAL BY ICP				3.000	<						
01077	SILVER, TOTAL RECOVERABLE	UG/L	AS	AG ANAL BY ICP				5.000	<	50.000					
01082	STRONTIUM, TOTAL RECOVERABLE	UG/L	AS	SR ANAL BY ICP				998.000							
01087	WANADIUM, TOTAL RECOVERABLE	UG/L	AS	V ANAL BY ICP				4.000	<						
01092	ZINC, TOTAL RECOVERABLE	UG/L	AS	ZN ANAL BY ICP				992.000		5000.000					
01147	SELENIUM, TOTAL RECOVERABLE	UG/L	AS	SE ASSE				1.000	<	10.000					
70300	RESIQUE, TOTAL FILTERABLE	2180	C-MG/L					617.000							
70304	TOTAL DISSOLVED SOLIDS	MG/L	AS	FE C				650.000							
71900	MERCURY, TOTAL	UG/L	AS	HG				0.100	<	2.000					

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